

Listing of Claims

Claims 1-12. (Canceled)

13. (Original) A roadway communication system comprising a plurality of road transmission antennas, and a vehicle mounted device receiving electromagnetic waves radiated from the road transmission antennas,

wherein the road transmission antennas each have a specific polarization characteristic and radiate the same cell with the waves carried at the same frequency and containing the same content, and

wherein the vehicle mounted device comprises a plurality of vehicle reception antennas having different polarization for receiving the waves radiated from the road transmission antennas, and diversity reception means performing diversity reception using the vehicle reception antennas.

14. (Original) The roadway communication system of Claim 13, wherein the vehicle mounted device further comprises reception-level detection means for detecting reception levels of the waves received by the vehicle reception antennas on a polarization-characteristic basis, and

wherein the diversity reception means performs the diversity reception based on the reception level detected by the reception-level detection means.

15. (Original) The roadway communication system of Claim 13, wherein the diversity reception means performs either of the following operations for the diversity reception:

(a) an operation of switching or combining the signals which were received by the vehicle reception antennas and are to be decoded; and

(b) an operation of switching or combining the codes which were received by the vehicle reception antennas and then decoded.

16. (Original) The roadway communication system of Claim 13, wherein the vehicle reception antennas are a polarization array antenna whereas the vehicle mounted device further comprises reception-signal detection means for detecting a reception level or phase of the wave received by each of the vehicle reception antennas, and

wherein the diversity reception means performs the diversity reception using information on the reception level or phase detected by the reception-signal detection means.

17. (Original) The roadway communication system of Claim 13, further comprising a signal transmission unit for transmitting signals modulated with data of the same content to the road transmission antennas via a plurality of transmission lines, wherein an optical fiber radio signal transmission system is used as a transmission system for outputting the signals to the plural transmission lines.

18. (Original) the roadway communication system of Claim 13 or 17, wherein Orthogonal Frequency Division Multiplex (OFDM) technique in which a guard time is provided at each symbol is used as a data modulation technique.

19. (Original) a roadway communication system comprising a vehicle mounted device, and a plurality of road reception antennas for receiving electromagnetic waves radiated from the vehicle mounted device,

wherein the vehicle mounted device comprises vehicle transmission antennas with different polarization characteristics for radiating electromagnetic waves modulated with vehicle data,

wherein the plural road reception antennas each have a specific polarization characteristic and are disposed to provide directivity to the same cell,

wherein the road reception antennas each comprise diversity reception means for performing diversity reception based on the signals received by the road reception antennas.

20. (Original) The roadway communication system of Claim 19, further comprising reception-level detection means for detecting reception levels of the plural road reception antennas on a polarization-characteristic basis, and

wherein the diversity reception means performs the diversity reception based on the reception level detected by the reception-level detection means.

21. (Original) the roadway communication system of Claim 19, wherein the diversity reception means performs either of the following operations for diversity reception:

(a) an operation of switching or combining the signals received by the road reception antennas; and

(b) an operation of switching or combining the codes which were received by the road reception antennas and then decoded.

22. (Original) The roadway communication system of Claim 19, further comprising a signal reception unit for receiving, via transmission lines, the signals received by the road reception antennas, and

wherein an optical fiber radio signal transmission system is used as a transmission system for outputting the signals to the transmission lines.

23. (Original) the roadway communication system of Claim 19, wherein the vehicle mounted device uses Orthogonal Frequency Division Multiplex (OFDM) modulation technique, as a data modulation technique, in which a guard time is provided at each symbol.

Claims 24-33. (Canceled)